

REMARKS

Applicants are amending their claims in order to claim further aspects of the present invention. Specifically, Applicants are adding new claims 11-16 to the application. Claims 11 and 12, dependent respectively on claims 1 and 11, respectively recites that the base film includes at least one rubber material selected from a specified group thereof, and recites a content of rubber material contained in the base film, consistent with descriptions in the first and second paragraphs of section [0019], on pages 15 and 16 of Applicants' specification. Claim 13, dependent on claim 1, recites that the decorative sheet has an elongation at break as measured at 40°C in a range of 10-20% (note the second paragraph of section [0016], on page 13 of Applicants' specification). Claims 14 and 15, dependent respectively on claims 1 and 14, respectively recites that the decorative sheet has the elongation at break, as measured at 25°C, of 3-10%, in both a flow direction during formation of the base film and a direction perpendicular to the flow direction; and recites that the decorative sheet has the elongation at break, as measured at 120°C, of 200% or more, in both the flow direction during formation of the base film and the direction perpendicular to the flow direction. Note, for example, the last paragraph of section [0015], on page 12 of Applicants' specification. This last paragraph of section [0015] on page 12 also provides a definition of the term "elongation at break". Claim 16, dependent on claim 1, recites that the decorative sheet further comprises an adhesive layer such that the adhesive layer and base film sandwich the decorative layer, consistent with Fig. 1, the description in connection therewith in section [0014] on page 10 of Applicants' specification, the further description in connection therewith in the first paragraph of section [0015] on

page 11 of Applicants' specification, and the description in section [0024] on pages 18 and 19 of Applicants' specification.

Applicants respectfully submit that all of the claims presented for consideration by the Examiner patentably distinguish over the teachings of the reference applied by the Examiner in rejecting claims in the Office Action mailed May 6, 2011, that is, the teachings of U.S. Patent No. 6,326,086 to Mori, et al., under the provisions of 35 USC 102 and 35 USC 103.

It is respectfully submitted that this reference as applied by the Examiner would have neither disclosed nor would have suggested such a decorative sheet for simultaneous decoration and injection molding as in the present claims, having the recited elongation at break as measured at 120°C, and wherein this decorative sheet also has an elongation at break as measured at 25°C of 3-10%. See claim 1.

As described in section [0015] on pages 11 and 12 of Applicants' specification, a decorative sheet having an elongation at break, as measured at 25°C, of 3-10%, exhibits good strength thereof, avoiding breaking of the sheet due to tensile force applied to the base film when the decorative layer is formed on the base film through printing or breaking of the sheet when the sheet is fed to an apparatus for preforming or simultaneous decoration and injection molding; yet wherein the sheet can effectively be trimmed after the molding procedure and the sheet avoids exfoliation at an end portion of the molded product.

Furthermore, the decorative sheet having an elongation at break as measured at 120°C of 200% or more exhibits good moldability and good conformability to the molding surface of a mold during the course of preforming, prior to injection molding, note the paragraph bridging pages 12 and 13 of Applicants' specification.

In addition, it is respectfully submitted that the teachings of the applied reference would have neither disclosed nor would have suggested such a decorative sheet as in the present claims, having features as discussed previously in connection with claim 1, and, moreover, wherein the decorative sheet has an elongation at break as measured at 40°C which is in a range of 10-20%. See claim 13.

A decorative sheet having the recited elongation at break as measured at 40°C, as in claim 13, provides advantages from the viewpoint of registering the sheet for printing, and to avoid breakage of the base film, for example, in a drying step performed when the decorative layer is printed on the base film and to achieve a desired flexibility when the resin molded product is removed from a mold. Note the sole full paragraph on page 13 of Applicants' specification.

Moreover, it is respectfully submitted that the teachings of the applied reference would have neither disclosed nor would have suggested such a decorative sheet as in the present claims, with the base film including at least one rubber material as in claim 11, in particular in an amount thereof as in claim 12.

By including such rubber material, easy control of the elongation at break is achieved. Note the paragraph bridging pages 15 and 16 of Applicants' specification.

In addition, it is respectfully submitted that the teachings of the applied reference would have neither disclosed nor would have suggested such decorative sheet as in the present claims, having features as discussed previously in connection with claim 1, and with additional features as in the other dependent claims reciting the decorative sheet, including (but not limited to) wherein the decorative sheet has an elongation at break as measured at 25°C as further defined

in claim 2, or has an elongation at break as measured at 120°C as further defined in claims 3 and 7; and/or material of the base film, as in claims 4, 5, 8 and 9.

Furthermore, it is respectfully submitted that the teachings of the applied reference would have neither disclosed nor would have suggested such a decorated resin molded product as in the present claims, utilizing the decorative sheet as respectively in claims 1 and 9 (see claims 6 and 10).

The present invention relates to a decorative sheet employed for simultaneous decoration and molding to form a molded article during an injection molding process, and to a decorated resin molded product using such sheet. As to the simultaneous decoration and injection molding, note section [0002] on pages 1 and 2 of Applicants' specification.

In general, in the decorated resin molded product, a laminate-type decorative sheet having an area exceeding the surface area of the molded product is bonded to a resin material of the molded product. The decorative sheet must be subjected to a step called "trimming" for cutting or removing an excess portion provided along the periphery of the molded product. Such trimming is performed at about 0-40°C (for example, generally at room temperature, about 25°C).

However, in previous decorative sheets used for simultaneous decoration and injection molding, a problem arises in that in trimming the excess portion of the decorative sheet, the excess portion fails to be cut successfully during the course of trimming, and the excess decorative sheet portion remains on the molded product, or the decorative sheet is exfoliated at an end portion of the molded product.

Against this background, Applicants provide a decorative sheet which avoids such problem in connection with trimming, enabling easy trimming, and which also exhibits good conformability to the molding surface of a mold and which is less likely

to produce wrinkling, blistering, breakage, etc., when laminated on and united with a resin molding through injection molding. Applicants have found that by using a decorative sheet having an elongation at break as measured at 25°C falling within a range as in the present claims, problems in connection with, for example, trimming, as discussed in the foregoing, can be avoided.

As to advantages achieved according to the present invention, having elongation at break as in the present claims, attention is respectfully directed to the Examples and Comparative Examples on pages 29-35 of Applicants' specification, and, in particular, note results shown in Table 1 on page 35 of Applicants' specification. As can be seen by these Examples and Comparative Examples, the present invention achieves moldability, trimming performance and printability, which combination of features is not achieved by any of the Comparative Examples.

Mori, et al. discloses a foil-decorated sheet used for decorating at the same time as molding. The foil-decorating sheet is comprised of a laminate of two or more types of films which is to be set in an injection mold for being integrally bonded to a surface of a molding resin, a surface film of the laminated film which is bonded to the molding resin having a peel strength of not less than 1 kgf/inch width at least at the interface between the surface film of the laminated film bonded to the molding resin and the molding resin; and wherein at least a transparent acrylic film is laminated on the surface film bonded to the molding resin, with a decorative layer formed between the surface film bonded to the molding resin and the acrylic film. Note the paragraph bridging columns 1 and 2 of this patent. This patent further discloses that such a foil-decorating sheet as discussed in the foregoing has, when a specific tensile test is carried out under an ambient temperature condition of 110°C, the test specimen exhibits a tensile elongation at break of not less than 150%. Note column 2, lines 5-

14 of this patent. See also column 6, lines 3-16; and column 7, lines 17-27, of this patent. See also column 8, lines 13-17, as to why the temperature was set at 110°C for the tensile elongation test.

As acknowledged by the Examiner in Item 4, on page 2 of the Office Action mailed May 6, 2011, Mori, et al. is silent on the elongation at break as measured at 25°C, of 3-10%.

Contrary to the conclusion by the Examiner, it is respectfully submitted that the Examiner has not established that such elongation at break as measured at 25°C as in the present claims would have been inherent, or obvious.

Thus, attention is respectfully directed to Comparative Example 3 on pages 34 and 35 of Applicants' specification, having an elongation at break at 120°C within the scope of the present claims, yet having an elongation at break as measured at 25°C outside the scope of the present claims. It is respectfully submitted that, for example, Comparative Example 3 rebuts any conclusion by the Examiner of inherency.

Furthermore, Applicants respectfully traverse the conclusion by the Examiner of obviousness of the elongation at break as measured at 25°C, as in the present claims. It is respectfully submitted that there is no basis for such conclusion of obviousness; in this regard, it is respectfully submitted that the applied reference does not even describe the elongation at break at 25°C being a result-affecting parameter; and, absent hindsight use of Applicants' disclosure, which hindsight use is improper under the guidelines of 35 USC 103, it is respectfully submitted that there is no basis for providing an elongation at break as measured at 25°C as in the present claims.

Furthermore, the unexpectedly better results achieved by the decorative sheet having an elongation at break as measured at 25°C as in the present claims, discussed in the foregoing and as shown in the Examples and Comparative Examples in Applicants' specification, particularly Comparative Examples 2 and 3 thereof, provide a basis for a conclusion of unobviousness of the presently claimed invention. In this regard, it is emphasized that the present invention achieves easy trimming, together with other good properties including good moldability. Mori, et al. does not even refer to trimming. Clearly, the applied reference would have neither disclosed, nor would have suggested, features of the present invention including elongation at break as measured at 25°C of the decorative sheet, and advantages due thereto.

As to the advantages achieved with an elongation at break of the decorated sheet as in the present claims, attention is particularly directed to Comparative Examples 2 and 3. Each of these Comparative Examples has an elongation at break at 120°C within the scope of the present claims, but an elongation at break at 25°C outside the scope of the present claims. As can be seen in Table 1 on page 35 of Applicants' specification, trimming performance of Comparative Example 3 is bad, and continuous printability in Comparative Example 2 is bad. In contrast, Examples 1 and 2 have decorative sheets capable of good moldability and trimming performance, as well as continuous printability.

In view of the foregoing comments and amendments, reconsideration and allowance of all claims in the above-identified application are respectfully requested.

To the extent necessary, Applicants hereby petition for an extension of time under 37 CFR 1.136. Kindly charge any shortage of fees due in connection with the filing of this paper, including any extension of time fees, to the Deposit Account of

Antonelli, Terry, Stout & Kraus, LLP, Account No. 01-2135 (case 396.46687X00),
and please credit any overpayments to such Deposit Account.

Respectfully submitted,

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